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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,116	09/19/2005	Norio Taniguchi	36856.1372	1266

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EXAMINER	
SUMMONS, BARBARA	
ART UNIT	PAPER NUMBER
2817	

NOTIFICATION DATE	DELIVERY MODE
07/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/550,116	TANIGUCHI, NORIO	
	Examiner	Art Unit	
	Barbara Summons	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005 (pre-amend.)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *15-32* is/are allowed.

6)☒ Claim(s) *33 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/19/05 & 11/21/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 21, on line 9, the Examiner believes "decreased" is incorrect and should be replaced with something similar to - - increased to a lesser extent than the first filter - -. That is, adding a temperature property improvement film to each filter (see page 21, lines 1-6) will necessarily "increase" or move to "a more positive value" (see Applicants' own definition on page 19, lines 3-5) the temperature coefficient of frequency (TCF) of each filter, such that the TCF of both the first filter and the second filter will be increased, and wherein the filter with the thicker film will a TCF that is increased relatively more than the TCF of the filter with the thinner film. In other words, adding a temperature property improvement film with a positive TCF to a filter on a negative TCF substrate, cannot "decrease" (make more negative) the TCF of the filter.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 33 and 34 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kadota et al. U.S. 2003/0151329.

Figs. 1 and 5 of Kadota et al. disclose a surface acoustic wave filter that includes structural elements, being the specified cut angle of a piezoelectric $LiTaO_3$ substrate (see also section [0063]) that inherently has a negative TCF and a thickness of a temperature property improvement film of SiO_2 that inherently has a positive TCF and that is disposed so as to cover the electrodes (13a,13b in Fig. 1) of the filter, that are configured such that a TCF of the filter is positive with respect to a change in temperature (see Fig. 5 and also section [0062]). That is, section [0062] notes that the TCF is zero when the thickness of the SiO_2 film is 0.25λ , such that any increase in thickness above 0.25λ of the positive TCF SiO_2 film will necessarily give the filter a positive TCF, and it is disclosed to have the SiO_2 film have a thickness of up to 0.45λ which includes the entire range of 0.3λ to 0.38λ (see also the tables in the claims 18, 19, 28, 29, 38 and 39). Regarding the SAW filter being a reception filter in a branching filter, Kadota discloses its filter for use as the bandpass filters in a duplexer/branching filter (see sections [0002] and [0004]), which inherently includes a reception filter and a transmission filter.

Allowable Subject Matter

4. Claims 15-32 are allowable over the prior art of record.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record is not considered to disclose or fairly suggest a branching filter/duplexer with first and second filters each having a respective temperature

property improvement film of a different thickness, so as to provide the first relatively low passband filter with a greater TCF than that of the second relatively high passband filter (see entire claim 15).

The closest prior art of record is considered to be Komuro et al. U.S. 6,989,723, which solves the same problem in the art by varying the thickness of the temperature compensating layers between the series and parallel resonators of a ladder filter so that the upper and lower sides of the passband will have different TCFs, and therefore move at different rates with the temperature change, which can be done for either the reception filter or the transmission filter or both filters of a duplexer/branching filter.

Regarding the "Y" references cited on the International Search Report, these references show that temperature property improvement films are well known, and that these SiO_2 films may also be used with different thicknesses to tune the frequencies of different passband filters, but it is also well known that such films are used to place the filter TCF close to zero so that the frequency characteristics of the filter will not vary too much with temperature changes. Consequently, there is no suggestion to combine the references in a way such that the TCF "of the first filter is greater than that of the second filter" since generally, absent any suggestion to the contrary, one of ordinary skill in the art would have been motivated by general knowledge to place the TCFs of both filters close to zero and not intentionally have the TCF of the lower frequency filter be greater than the TCF of the higher frequency band filter. Also, the SiO_2 films of different thicknesses for tuning two different passband filters to their respective different frequencies cannot be assumed to provide the recited relationship between the TCFs of

the filters because all other parameters of the filters (e.g. thicknesses of the electrodes, cut angles of the substrates, etc.) would have to be the same, and such a branching filter/duplexer is not disclosed or suggested.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The closest prior art of record is considered to be Komuro et al. U.S. 6,989,723 and was discussed above.

Kadota U.S. 2003/0137367 also discloses a SAW filter with a positive TCF (see Figs. 1 and 5) using silver electrodes, and Kadota et al. U.S. 6,946,930 also shows a SAW filter with a positive TCF (see Fig. 4).

Takeuchi et al. U.S. 7,002,437 discloses that it is generally known to use temperature property improvement layers to place the TCF at or close to zero (see e.g. col. 3, lines 62-65).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (571) 272-1771. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 271-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bs
July 2, 2007

Barbara Summons

BARBARA SUMMONS
PRIMARY EXAMINER